

APPENDIX H OF TEST REPORT T50915R_F

Graphs of EMI Measurements

FCC ID: Q47-MCROEM
Manufacturer: ERG Transit Systems
Test Sample: Contact less Smart Card Readers
Model: MCR_OEM
Serial No: 14.7456MHz Unit: Antenna - 0350435, Main
Board - 04273566
and 22.1184MHz Unit: Antenna - 05129574,
Main Board - 0504009

Date: 27th October 2005

APPENDIX H

LIST of GRAPHS of EMI MEASUREMENTS

Conducted EMI

Graph 1:	Active Line, 0.145 to 30.5 MHz, 22MHz, Antenna Connected
Graph 2:	Neutral Line, 0.145 to 30.5 MHz, 22MHz, Antenna Connected
Graph 3:	Active Line, 0.145 to 30.5 MHz, 14MHz, Antenna Connected
Graph 4:	Neutral Line, 0.145 to 30.5 MHz, 14MHz, Antenna Connected
Graph 5:	Active Line, 0.145 to 30.5 MHz, 14MHz, Antenna Disconnected
Graph 6:	Neutral Line, 0.145 to 30.5 MHz, 14MHz, Antenna Disconnected
Graph 7:	Active Line, 0.145 to 30.5 MHz, 22MHz, Antenna Disconnected
Graph 8:	Neutral Line, 0.145 to 30.5 MHz, 22MHz, Antenna Disconnected

Radiated EMI

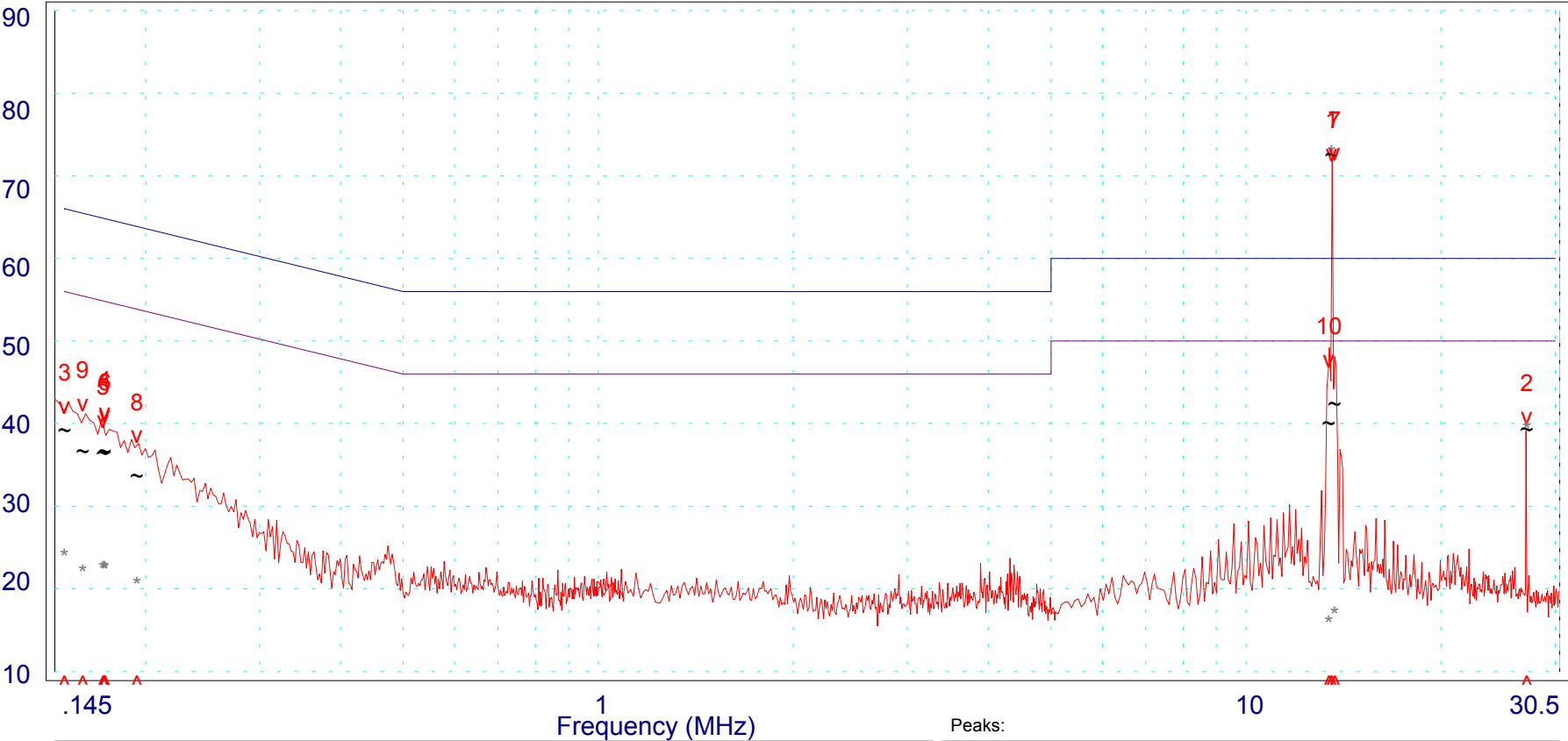
Graph 9:	Ambient Emissions, 0.009 to 30 MHz, 14MHz
Graph 10:	Carrier, 13.554 to 13.564 MHz, 14MHz
Graph 11:	Vertical Polarisation, 29 to 1000 MHz, 14MHz
Graph 12:	Horizontal Polarisation, 29 to 1000 MHz, 14MHz
Graph 13:	Ambient Emissions, 0.009 to 30 MHz, 22MHz
Graph 14:	Carrier, 13.554 to 13.564 MHz, 22MHz
Graph 15:	Vertical Polarisation, 29 to 1000 MHz, 22MHz
Graph 16:	Horizontal Polarisation, 29 to 1000 MHz, 22MHz

EMC Technologies Pty. Ltd. - Global Product Certification

FCC Class B
Conducted Emissions (dBuV)

Job No:T50915R_F p:\PCF\T50915F_1.PCF
Test Date: 12/10/05

GRAPH No. 1



ERG Transit Systems
Contactless Smart Card Reader (22.1184MHz).
Model: MCR_OEM. Antenna connected.
Serial No: 05129574(antenna) & 05040099(main board).

Limits:
FCCN_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)
FCCN_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)

Legend:
— Active Line

Ver 5.5 Build 107

Source:
50915cx1 7 8 9

t:L0110306 c1:C0020906 c2:NONE p:NONE a:L0100406
Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW
Test Officer:Jodie Foyle

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia
Phone +(612) 9624 2777 Fax+(612) 9838 4050

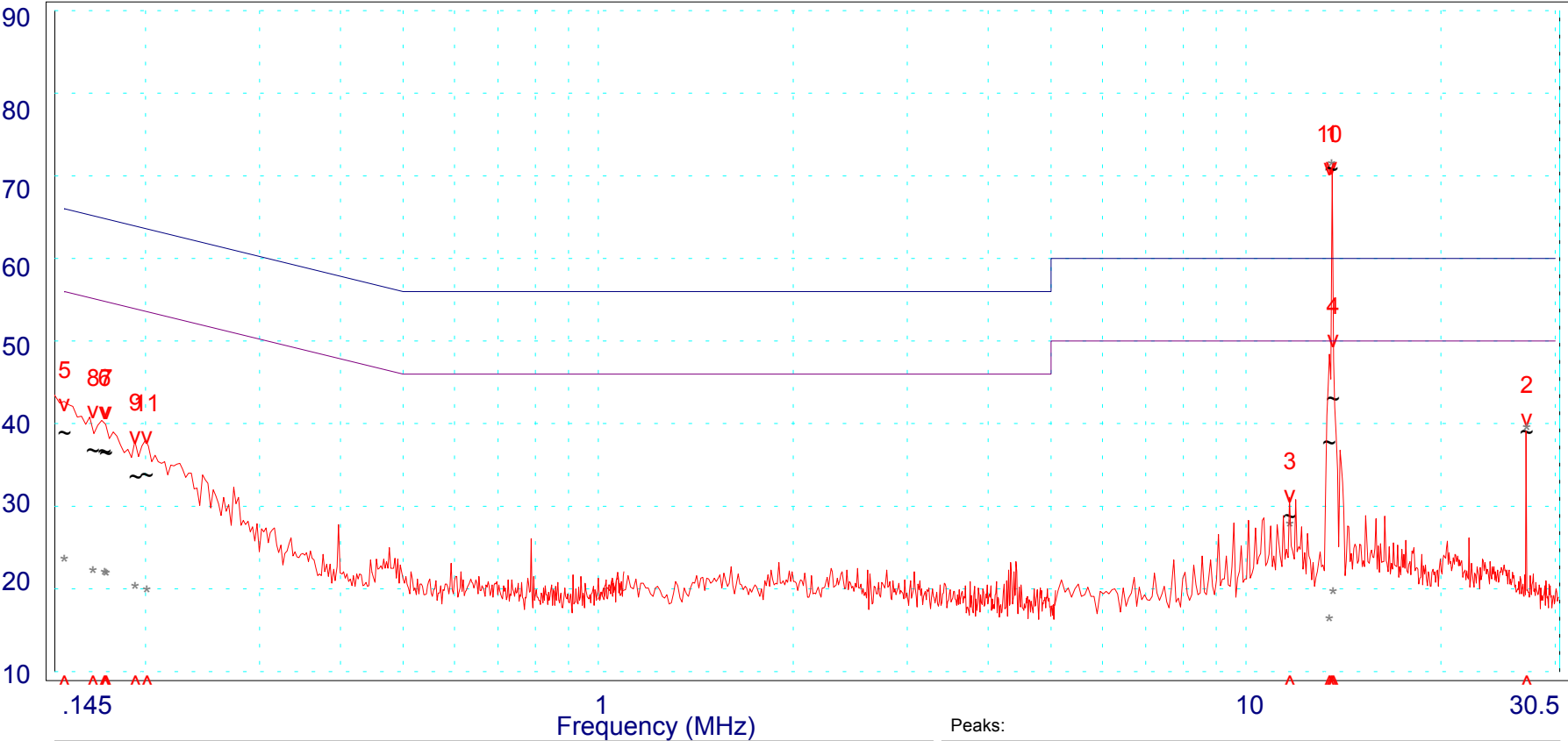
No	Freq (MHz)	Peak (dBuV)	Qp Val (dBuV)	FCCN_BQP (dBuV)	dL1 (dB)	Av Val (dBuV)	FCCN_BAV (dBuV)	dL2 (dB)
1	13.56	72.4	72.1	60.0	12.1	72.2	50.0	22.2
2	27.12	40.5	38.8	60.0	-21.2	38.8	50.0	-11.2
3	0.150	41.7	38.8	66.0	-27.3	23.4	56.0	-32.6
4	0.173	40.9	36.2	64.8	-28.6	21.9	54.8	-32.9
5	0.172	40.0	36.1	64.9	-28.8	21.9	54.9	-33.0
6	0.173	40.6	36.2	64.8	-28.6	21.8	54.8	-33.0
7	13.70	72.4	42.0	60.0	-18.0	16.3	50.0	-33.7
8	0.194	38.2	33.2	63.9	-30.7	20.0	53.9	-33.9
9	0.160	42.1	36.3	65.5	-29.2	21.4	55.5	-34.1
10	13.42	47.4	39.6	60.0	-20.4	15.3	50.0	-34.7

EMC Technologies Pty. Ltd. - Global Product Certification

FCC Class B
Conducted Emissions (dBuV)

Job No:T50915R_F p:\PCF\T50915F_2.PCF
Test Date: 12/10/05

GRAPH No. 2



ERG Transit Systems
Contactless Smart Card Reader (22.1184MHz).
Model: MCR_OEM. Antenna connected.
Serial No: 05129574(antenna) & 05040099(main board).

Limits:
FCCN_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)
FCCN_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)

Legend:
— Neutral Line

Ver 5.5 Build 107

Source:
50915cx1 10 11 12

t:L0110306 c1:C0020906 c2:NONE p:NONE a:L0100406
Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW
Test Officer:Jodie Foyle

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia
Phone +(612) 9624 2777 Fax+(612) 9838 4050

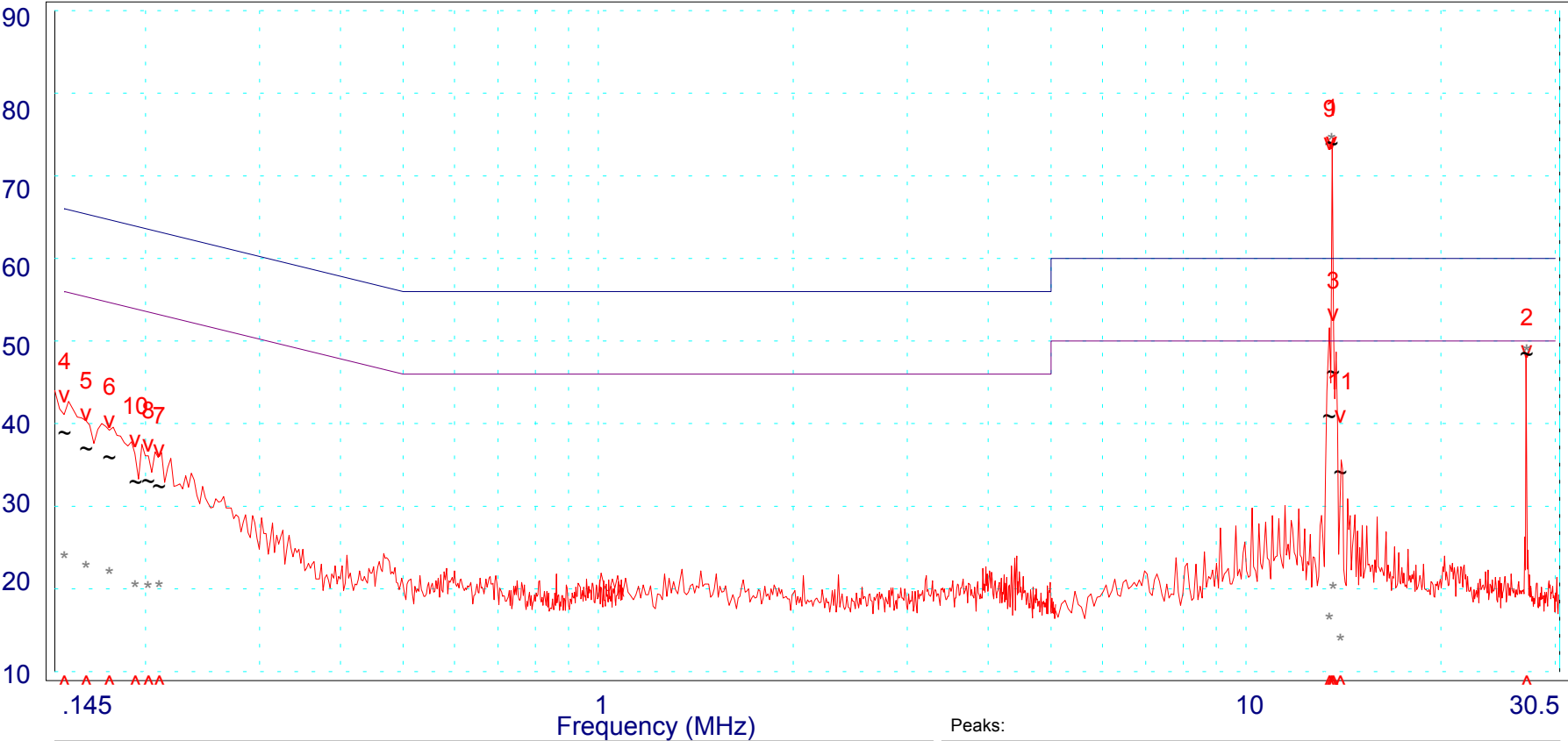
No	Freq (MHz)	Peak (dBuV)	Qp Val (dBuV)	FCCN_BQP (dBuV)	dL1 (dB)	Av Val (dBuV)	FCCN_BAV (dBuV)	dL2 (dB)
1	13.56	70.7	70.4	60.0	10.4	70.5	50.0	20.5
2	27.12	40.3	38.6	60.0	-21.5	38.5	50.0	-11.5
3	11.69	31.0	28.3	60.0	-31.7	26.9	50.0	-23.1
4	13.63	49.9	42.6	60.0	-17.5	18.7	50.0	-31.3
5	0.150	42.1	38.4	66.0	-27.6	22.6	56.0	-33.4
6	0.173	41.1	36.3	64.8	-28.6	21.0	54.8	-33.8
7	0.174	41.1	36.0	64.8	-28.8	20.9	54.8	-33.9
8	0.166	41.2	36.3	65.2	-28.9	21.2	55.2	-34.0
9	0.193	38.1	33.2	63.9	-30.8	19.3	53.9	-34.6
10	13.45	70.6	37.2	60.0	-22.8	15.4	50.0	-34.6
11	0.201	38.1	33.3	63.6	-30.2	18.9	53.6	-34.7

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FCC Class B
Conducted Emissions (dBuV)

Job No:T50915R_F p:\PCF\T50915F_3.PCF
Test Date: 12/10/05

GRAPH No. 3



ERG Transit Systems
Contactless Smart Card Reader (14.7456MHz)
Model: MCR_OEM. Antenna connected.
Serial No: 03504035(antenna) & 04273566(main board).

Limits:
FCCN_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)
FCCN_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)

Legend:
Active Line

Ver 5.5 Build 107

Source:
50915cx1 13 14 15

t:L0110306 c1:C0020906 c2:NONE p:NONE a:L0100406
Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW
Test Officer:Jodie Foyle

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia
Phone +(612) 9624 2777 Fax+(612) 9838 4050

Peaks:

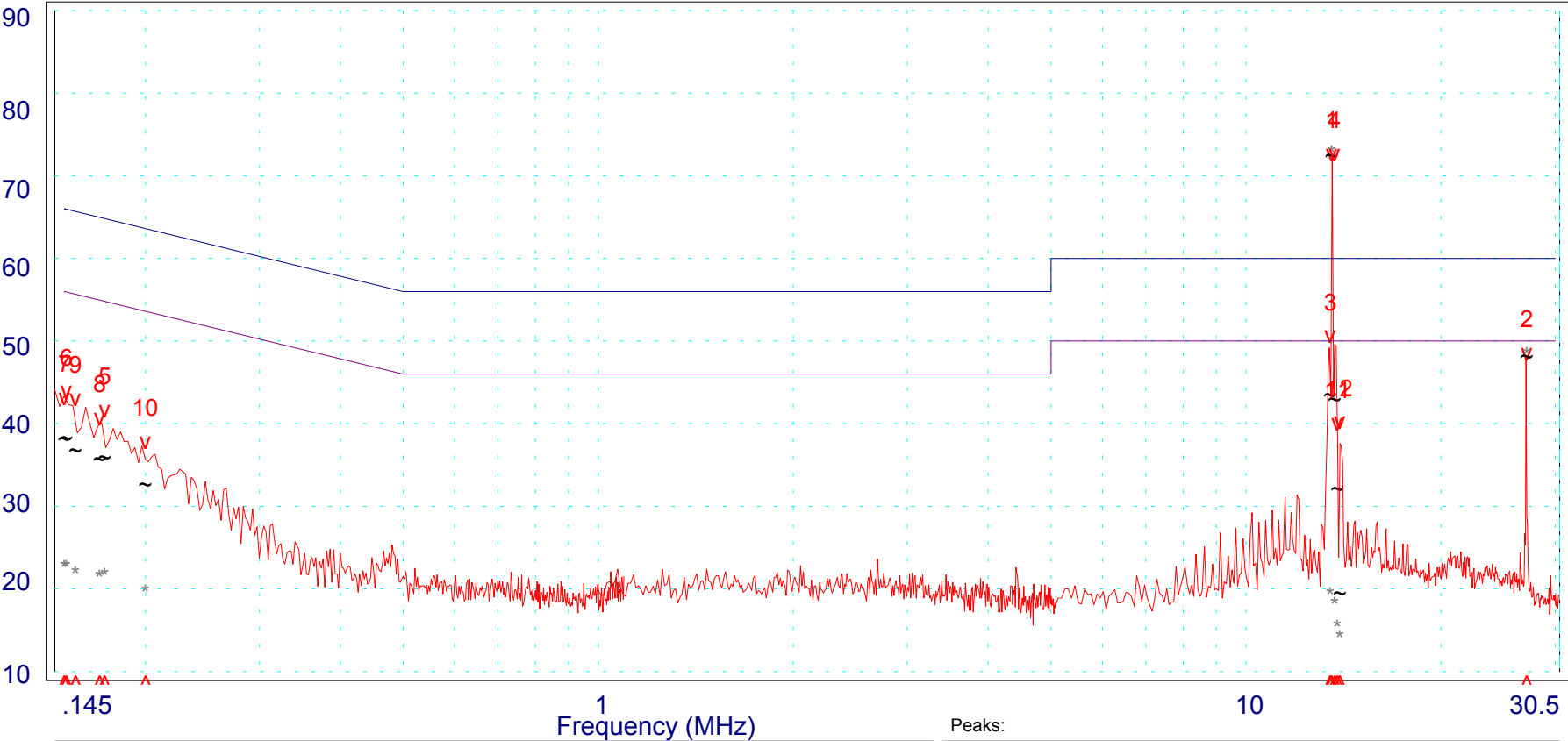
No	Freq (MHz)	Peak (dBuV)	Qp Val (dBuV)	FCCN_BQP (dB)	Av Val (dBuV)	FCCN_BAV (dBuV)	dL2 (dB)
1	13.56	73.8	73.5	60.0	73.7	50.0	23.7
2	27.12	48.5	48.0	60.0	48.1	50.0	-1.9
3	13.63	52.9	45.8	60.0	19.3	50.0	-30.7
4	0.150	43.2	38.5	66.0	23.0	56.0	-33.0
5	0.162	40.8	36.6	65.4	21.9	55.4	-33.5
6	0.176	40.1	35.5	64.7	21.1	54.7	-33.6
7	0.210	36.5	32.0	63.2	19.5	53.2	-33.7
8	0.202	37.2	32.6	63.5	19.4	53.5	-34.1
9	13.45	73.7	40.5	60.0	15.6	50.0	-34.4
10	0.193	37.7	32.5	63.9	19.5	53.9	-34.4
11	13.99	40.7	33.7	60.0	13.1	50.0	-36.9

EMC Technologies Pty. Ltd. - Global Product Certification

FCC Class B
Conducted Emissions (dBuV)

Job No:T50915 R_F p:\PCF\T50915F_4.PCF
Test Date: 12/10/05

GRAPH No. 4



ERG Transit Systems
Contactless Smart Card Reader (14.7456MHz)
Model: MCR_OEM. Antenna connected.
Serial No: 03504035(antenna) & 04273566(main board).

Limits:
FCCN_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)
FCCN_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)

Legend:
— Neutral Line

Ver 5.5 Build 107

Source:
50915cx1 16 17 18

t:L0110306 c1:C0020906 c2:NONE p:NONE a:L0100406
Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW
Test Officer:Jodie Foyle

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia
Phone +(612) 9624 2777 Fax+(612) 9838 4050

Peaks:								
No	Freq (MHz)	Peak (dBuV)	Qp Val (dBuV)	FCCN_BQP (dBuV)	dL1 (dB)	Av Val (dBuV)	FCCN_BAV (dBuV)	dL2 (dB)
1	13.56	72.3	72.0	60.0	12.0	72.2	50.0	22.2
2	27.12	48.3	47.7	60.0	-12.3	47.8	50.0	-2.2
3	13.49	50.3	43.0	60.0	-17.0	18.7	50.0	-31.3
4	13.70	72.3	42.5	60.0	-17.5	17.5	50.0	-32.5
5	0.173	41.3	35.5	64.8	-29.3	21.0	54.8	-33.8
6	0.151	43.6	37.8	65.9	-28.1	22.0	55.9	-33.9
7	0.150	42.8	37.7	66.0	-28.3	22.0	56.0	-34.0
8	0.170	40.4	35.3	65.0	-29.6	20.8	55.0	-34.2
9	0.156	42.7	36.3	65.7	-29.3	21.2	55.7	-34.5
10	0.200	37.5	32.2	63.6	-31.5	19.0	53.6	-34.6
11	13.84	39.7	31.6	60.0	-28.4	14.8	50.0	-35.2
12	13.96	39.9	19.1	60.0	-40.9	13.5	50.0	-36.5

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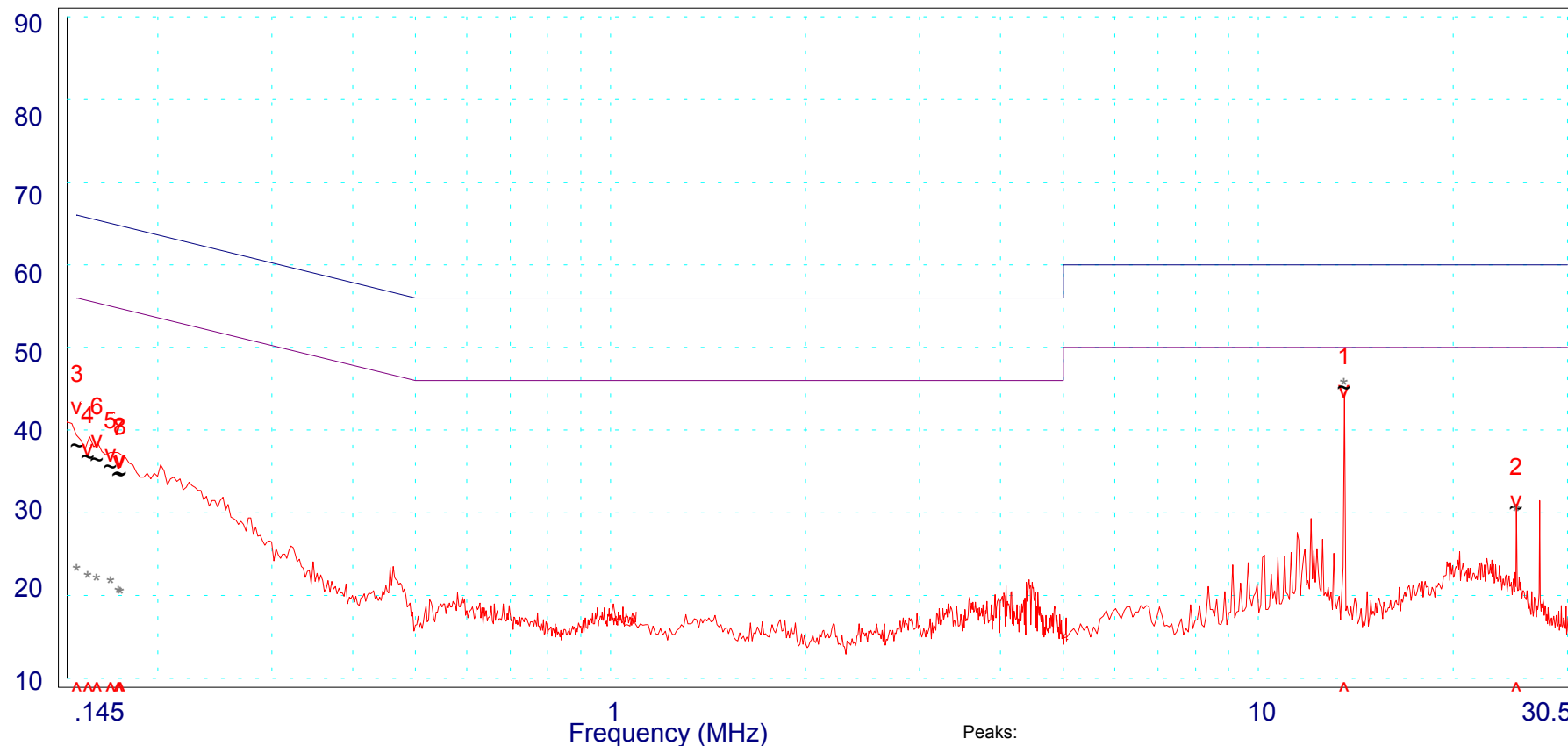
FCC Class B

Conducted Emissions (dBuV)

Job No:T50915R_F p:\PCF\T50915F_5.PCF

Test Date: 20/10/05

GRAPH No. 5



ERG Transit Systems
Contactless Smart Card Reader (14.7456MHz)
Model: MCR_OEM. Antenna terminals terminated.
Serial No: 03504035(antenna) & 04273566(main board).

Limits:
FCCN_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)
FCCN_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)

Legend:
— Active Line

Ver 5.5 Build 107
Generic file for any test.
t:L0110306 c1:C0020906 c2:NONE p:NONE a:L0100406
Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW
Test Officer: Jodie Foyle

Source:
50915cx2 1 2 3

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia
Phone +(612) 9624 2777 Fax+(612) 9838 4050

Peaks:

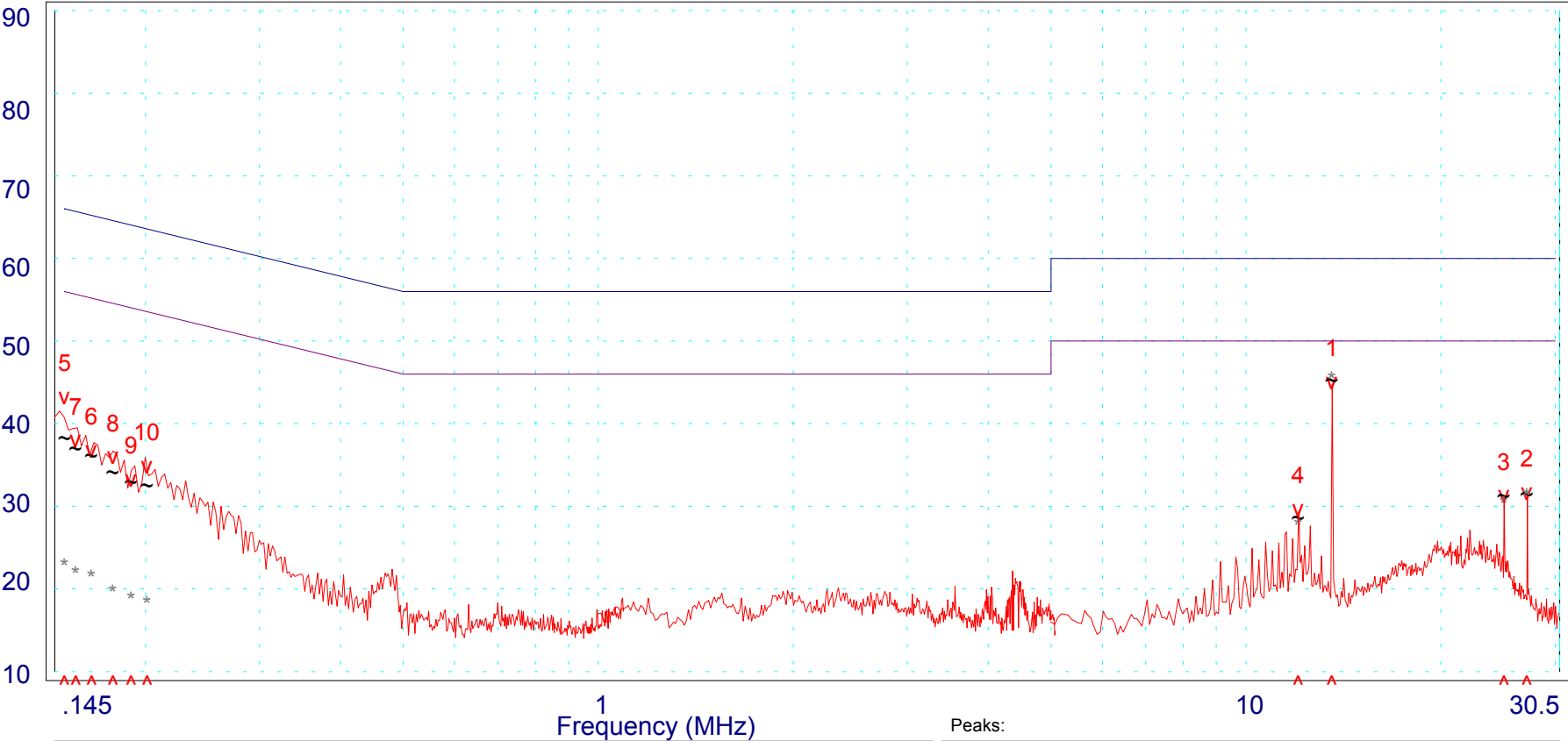
No	Freq (MHz)	Peak (dBuV)	Qp Val (dBuV)	FCCN_BQPdL1 (dB)	Av Val (dBuV)	FCCN_BAVdL2 (dB)
1	13.56	44.5	44.8	60.0	-15.2	44.8
2	25.00	31.1	30.2	60.0	-29.8	29.5
3	0.150	42.5	37.7	66.0	-28.3	22.3
4	0.156	37.4	36.3	65.7	-29.3	21.5
5	0.169	36.7	35.2	65.0	-29.8	20.8
6	0.161	38.4	36.0	65.4	-29.4	21.1
7	0.174	35.9	34.2	64.8	-30.5	19.6
8	0.175	36.0	34.3	64.7	-30.4	19.5

EMC Technologies Pty. Ltd. - Global Product Certification

FCC Class B
Conducted Emissions (dBuV)

Job No:T50915R_F p:\PCF\T50915F_6.PCF
Test Date: 20/10/05

GRAPH No. 6



ERG Transit Systems
Contactless Smart Card Reader (14.7456MHz)
Model: MCR_OEM. Antenna terminals terminated.
Serial No: 03504035(antenna) & 04273566(main board).

Limits:
FCCN_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)
FCCN_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)

Legend:
— Neutral Line

Ver 5.5 Build 107
Generic file for any test.
t:L0110306 c1:C0020906 c2:NONE p:NONE a:L0100406
Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW
Test Officer: Jodie Foyle

Source:
50915cx2 4 5 6

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia
Phone +(612) 9624 2777 Fax+(612) 9838 4050

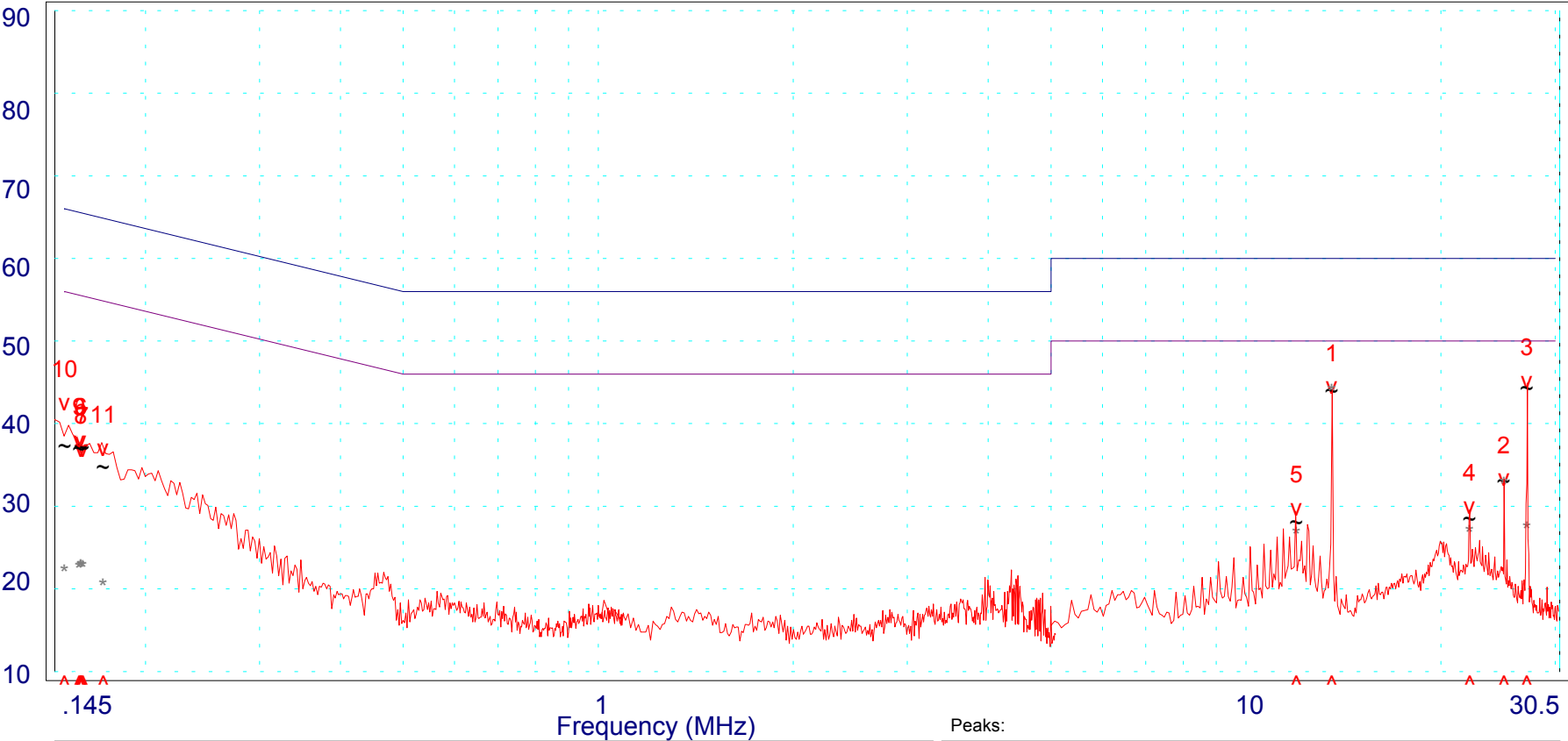
Peaks:								
No	Freq (MHz)	Peak (dBuV)	Qp Val (dBuV)	FCCN_BQP (dBuV)	dL1 (dB)	Av Val (dBuV)	FCCN_BAV (dBuV)	dL2 (dB)
1	13.56	44.8	44.8	60.0	-15.2	44.8	50.0	-5.2
2	27.12	31.3	31.1	60.0	-28.9	30.7	50.0	-19.3
3	25.00	31.0	30.7	60.0	-29.3	29.7	50.0	-20.3
4	12.03	29.4	28.1	60.0	-31.9	27.1	50.0	-22.9
5	0.150	42.9	37.8	66.0	-28.2	22.2	56.0	-33.8
6	0.165	36.5	35.7	65.2	-29.5	20.8	55.2	-34.4
7	0.156	37.7	36.5	65.7	-29.2	21.2	55.7	-34.5
8	0.178	35.7	33.6	64.6	-30.9	19.0	54.6	-35.6
9	0.190	33.0	32.4	64.0	-31.6	18.2	54.0	-35.8
10	0.201	34.5	32.1	63.6	-31.5	17.6	53.6	-36.0

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FCC Class B
Conducted Emissions (dBuV)

Job No:T50915R_F p:\PCF\T50915F_7.PCF
Test Date: 20/10/05

GRAPH No. 7



ERG Transit Systems
Contactless Smart Card Reader (22.1184MHz)
Model: MCR_OEM. Antenna terminals terminated.
Serial No: 05129574(antenna) & 05040099(main board).

Limits:
FCCN_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)
FCCN_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)

Legend:
Active Line

Ver 5.5 Build 107
Generic file for any test.
t:L0110306 c1:C0020906 c2:NONE p:NONE a:L0100406
Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW
Test Officer:Jodie Foyle

Source:
50915cx2 7 8 9

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia
Phone +(612) 9624 2777 Fax+(612) 9838 4050

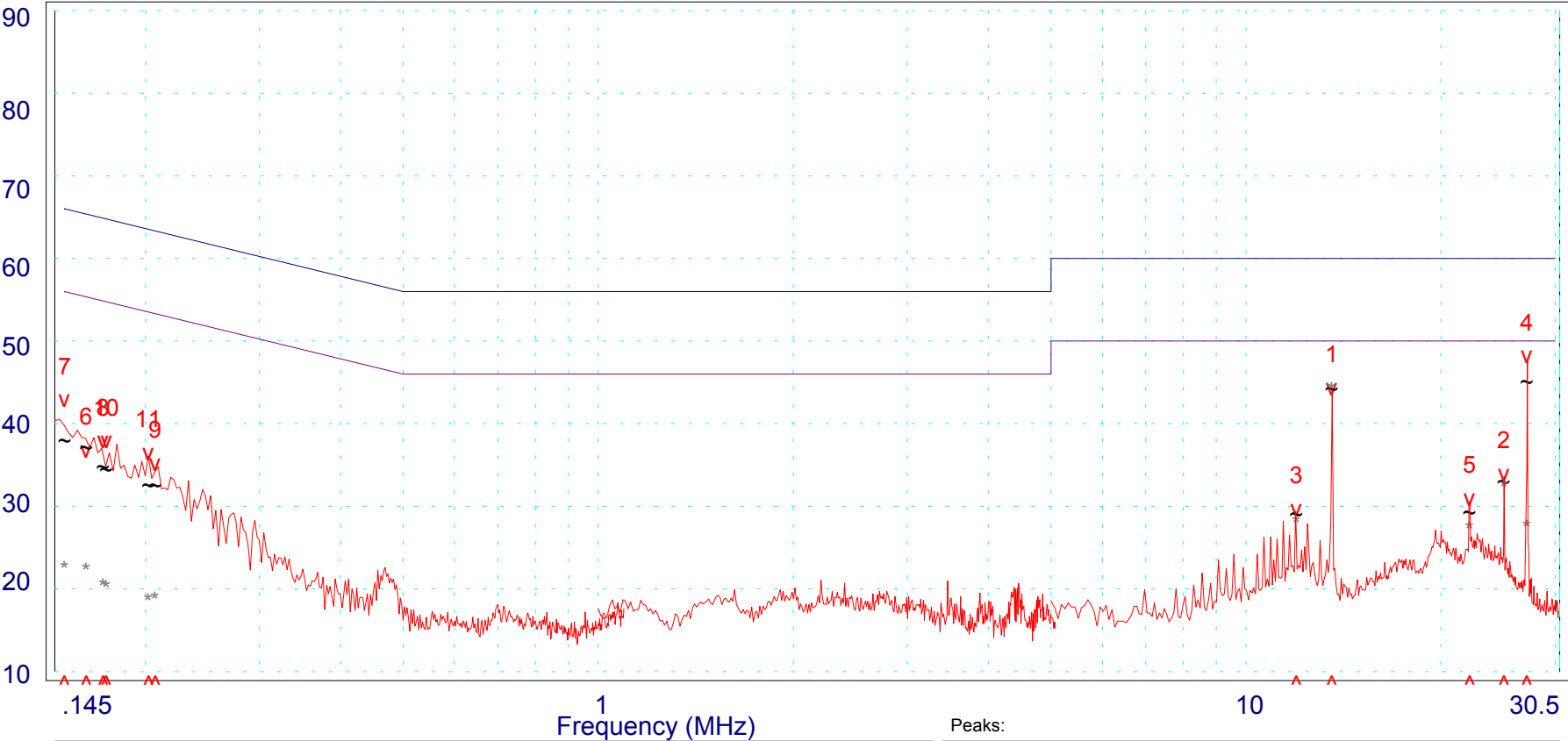
No	Freq (MHz)	Peak (dBuV)	Qp Val (dBuV)	FCCN_BQP (dBuV)	dL1 (dB)	Av Val (dBuV)	FCCN_BAV (dBuV)	dL2 (dB)
1	13.56	44.1	43.6	60.0	-16.4	43.3	50.0	-6.7
2	25.00	33.0	32.6	60.0	-27.4	32.1	50.0	-17.9
3	27.12	44.9	43.9	60.0	-16.1	26.6	50.0	-23.4
4	22.12	29.7	28.1	60.0	-31.9	26.2	50.0	-23.8
5	11.96	29.4	27.7	60.0	-32.3	26.0	50.0	-24.0
6	0.159	37.6	36.9	65.5	-28.6	22.1	55.5	-33.4
7	0.160	36.5	36.6	65.5	-28.9	22.0	55.5	-33.5
8	0.159	36.5	36.8	65.5	-28.7	22.0	55.5	-33.5
9	0.158	37.6	36.5	65.6	-29.1	21.9	55.6	-33.7
10	0.150	42.2	36.9	66.0	-29.1	21.5	56.0	-34.5
11	0.172	36.6	34.3	64.9	-30.6	19.8	54.9	-35.1

EMC Technologies Pty. Ltd. - Global Product Certification

FCC Class B
Conducted Emissions (dBuV)

Job No:T50915R_F p:\PCF\T50915F_8.PCF
Test Date: 20/10/05

GRAPH No. 8



ERG Transit Systems
Contactless Smart Card Reader (22.1184MHz)
Model: MCR_OEM. Antenna terminals terminated.
Serial No: 05129574(antenna) & 05040099(main board).

Limits:
FCCN_BQP FCC CLASS B QP CONDUCTED LIMITS (CISPR)
FCCN_BAV FCC CLASS B AV CONDUCTED LIMITS (CISPR)

Legend:
Neutral Line

Ver 5.5 Build 107
Generic file for any test.
t:L0110306 c1:C0020906 c2:NONE p:NONE a:L0100406
Site ID: Syd Room#2,3/87 Station Rd, Seven Hills, NSW
Test Officer:Jodie Foyle

Source:
50915cx2 12 11 10

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia
Phone +(612) 9624 2777 Fax+(612) 9838 4050

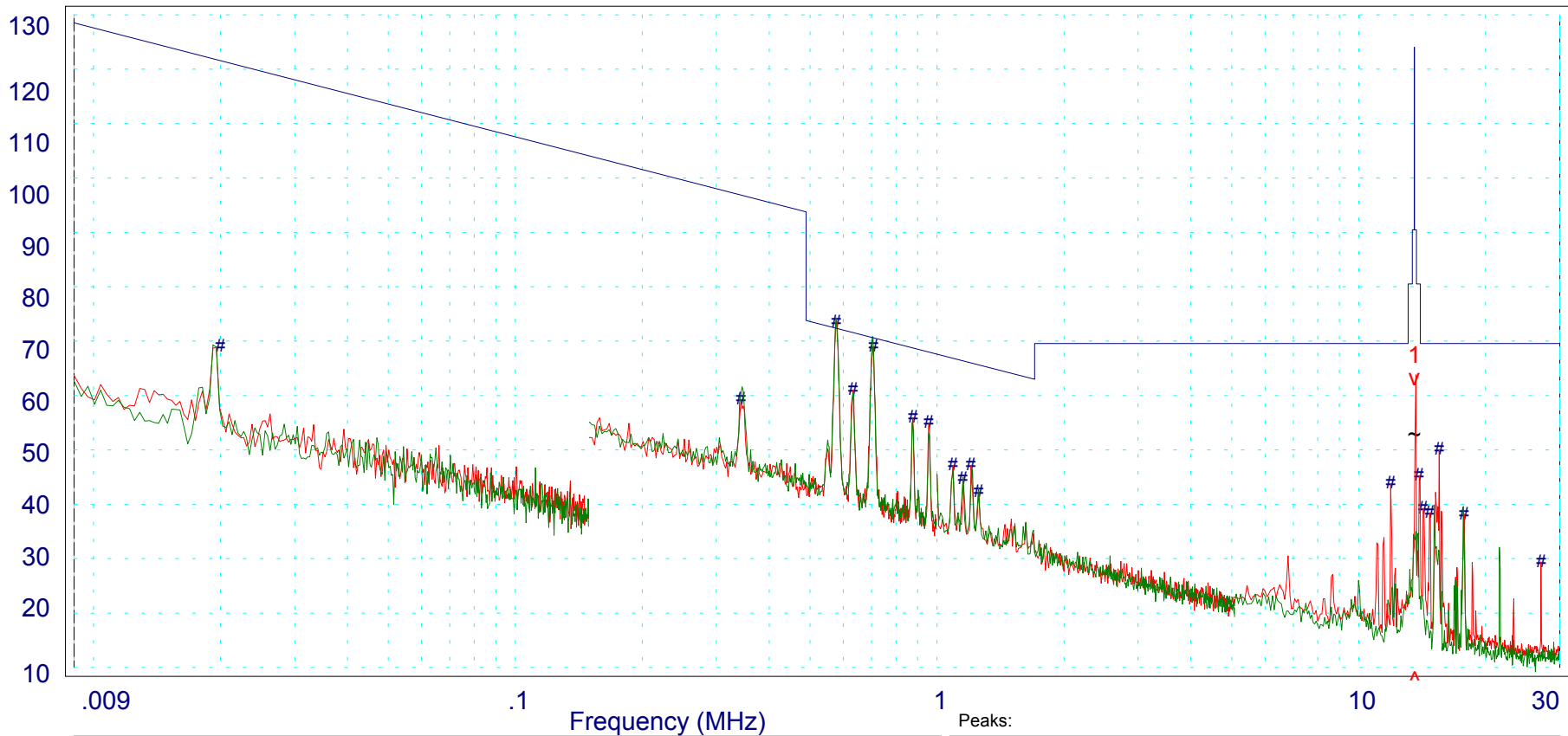
No	Freq (MHz)	Peak (dBuV)	Qp Val (dBuV)	FCCN_BQP (dBuV)	dL1 (dB)	Av Val (dBuV)	FCCN_BAV (dBuV)	dL2 (dB)
1	13.56	44.0	43.8	60.0	-16.2	43.5	50.0	-6.5
2	25.00	33.6	32.5	60.0	-27.5	31.7	50.0	-18.3
3	11.96	29.4	28.5	60.0	-31.5	27.4	50.0	-22.6
4	27.12	47.8	44.7	60.0	-15.3	26.9	50.0	-23.1
5	22.12	30.6	28.8	60.0	-31.3	26.7	50.0	-23.3
6	0.162	36.5	36.7	65.4	-28.7	21.7	55.4	-33.7
7	0.150	42.5	37.4	66.0	-28.6	21.9	56.0	-34.1
8	0.172	37.6	34.3	64.9	-30.6	19.8	54.9	-35.1
9	0.207	34.8	32.1	63.3	-31.2	18.2	53.3	-35.1
10	0.174	37.6	34.0	64.8	-30.8	19.5	54.8	-35.3
11	0.202	36.1	32.1	63.5	-31.5	17.9	53.5	-35.6

EMC Technologies Pty. Ltd. - Global Product Certification

FCC Class B
Radiated Emissions (dBuV)
= Ambient

Job No:T50915R_F C:\plotting\PCF\T50915f_5.PCF
Test Date: 17-10-05

GRAPH No. 9



ERG Transit Systems
Contactless Smart Card Reader
Model: MCR_OEM
14MHz version

Limits:
FCC_loop_3mFcc Pt15 Subpart C Section 15.209(a) 3Metre Limits

Legend:
— Ambients
— Emissions

Ver 5.5 Build 107
Colo Radiated Test Setup Active Loop
t:A0080408E c1:C0201105 c2:NONE p:NONE a:NONE
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW
Test Officer: Bruce Holdsworth

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia
Phone +(612) 9624 2777 Fax+(612) 9838 4050

Peaks:

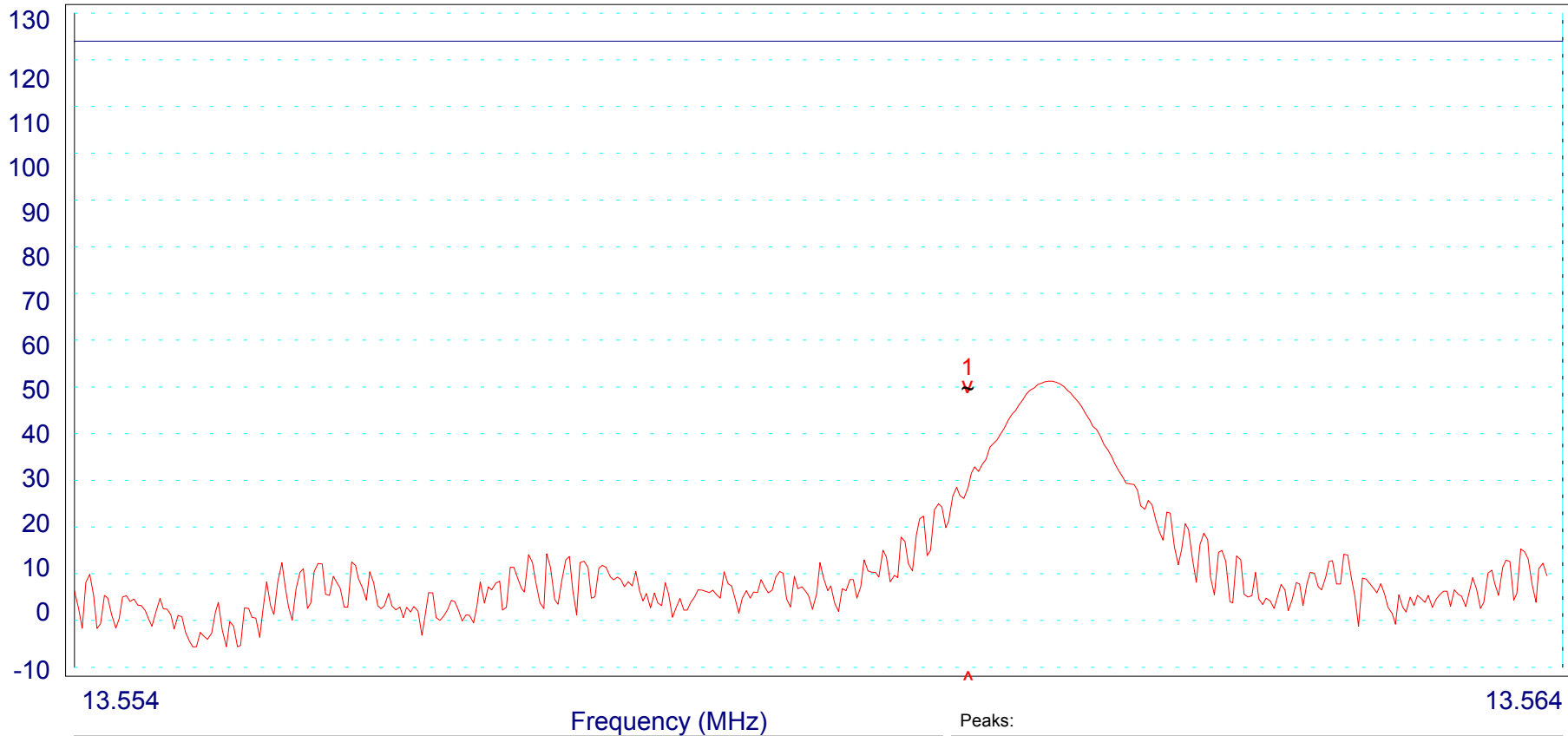
No	Freq (MHz)	Peak (dBuV)	Qp Val	FCC_loop_3m (dBuV)	3dB (dB)
1	13.56	63.8	53.2	124.0	-70.8

EMC Technologies Pty. Ltd. - Global Product Certification

FCC Class B
Radiated Emissions (dBuV)
= Ambient

Job No:T50915R_F C:\plotting\PCF\T50915f_6.PCF
Test Date: 17-10-05

GRAPH No. 10



ERG Transit Systems
Contactless Smart Card Reader
Model: MCR_OEM
14MHz version

Peaks:					
No	Freq (MHz)	Peak (dBuV)	Qp Val	FCC_loop_3dB (dBuV)	3dB (dB)
1	13.56	51.1	50.4	124.0	-73.6

Limits:
FCC_loop_3mFcc Pt15 Subpart C Section 15.209(a) 3Metre Limits

Legend:
Carrier

Ver 5.5 Build 107
Colo Radiated Test Setup Active Loop
t:A0080408E c1:C0201105 c2:NONE p:NONE a:NONE
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW
Test Officer: Bruce Holdsworth

Source:
50915r11 5

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia
Phone +(612) 9624 2777 Fax+(612) 9838 4050

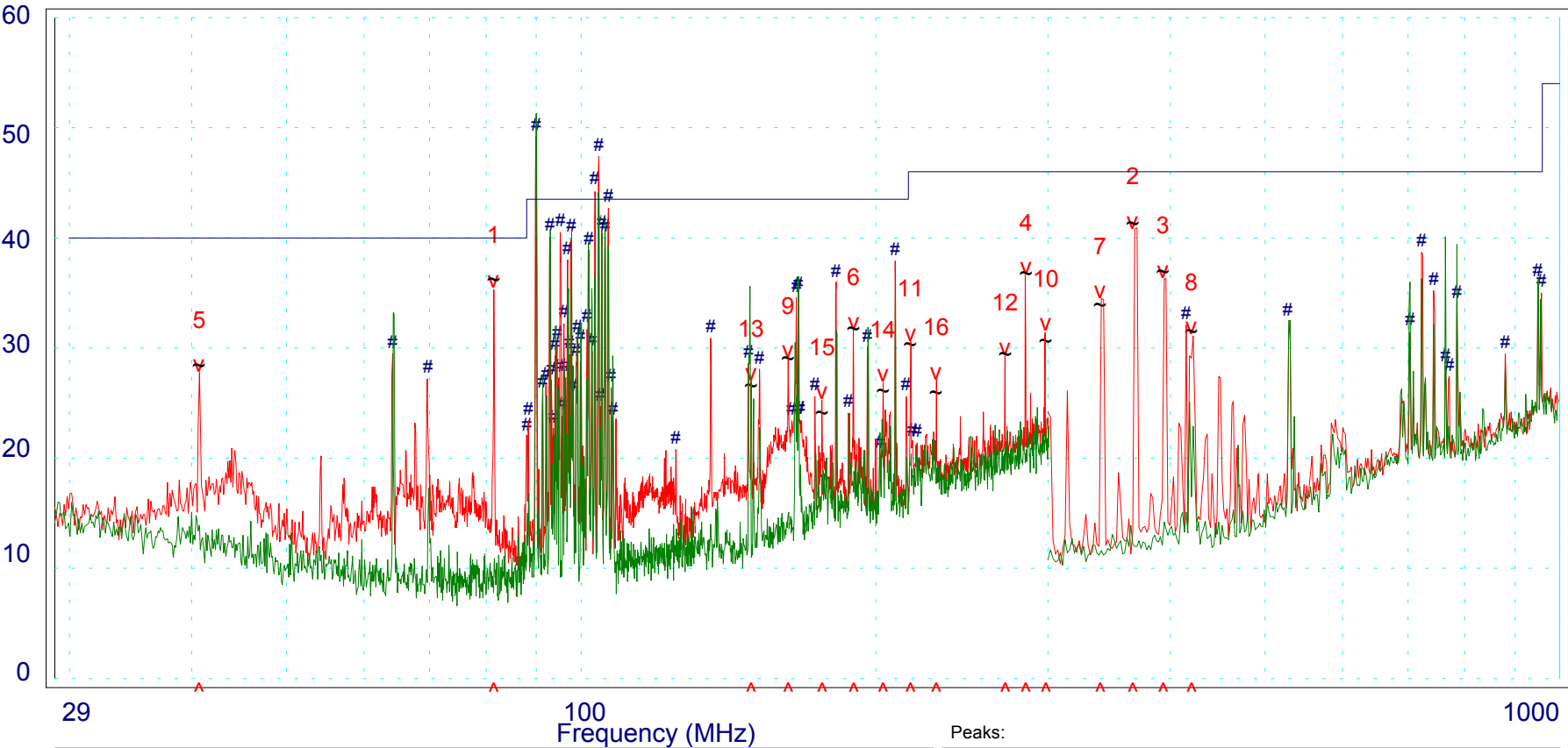
EMC Technologies Pty. Ltd. - Global Product Certification

FCC Class B
Radiated Emissions (dBuV/m)
= Ambient

Job No:T50915R_F C:\plotting\PCF\T50915f_7.PCF

Test Date: 17-10-05

GRAPH No. 11



ERG Transit Systems
Contactless Smart Card Reader
Model: MCR_OEM
14MHz version

Limits:
FCC-B3 FCC CLASS B RAD 3M LIMITS

Legend:
— Vertical Ambients
— Vertical Emissions

Ver 5.5 Build 107
Colo Radiated Test Setup
t:A0690206 c1:C0201105 c2:NONE p:A0961105 a:NONE
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW
Test Officer: Bruce Holdsworth

Source:
\amb0607 1 2 3 4 5 13
T50915r9 13 14 15 16 17 23

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Peaks:					
No	Freq (MHz)	Peak (dBuV/m)	Qp Val	FCC-B3 (dBuV/m)	dL1 (dB)
1	81.38	35.4	35.4	40.0	-4.6
2	366.15	40.8	40.5	46.0	-5.5
3	393.28	36.3	36.1	46.0	-9.9
4	284.79	36.6	36.0	46.0	-10.0
5	40.69	27.8	27.6	40.0	-12.4
6	189.87	31.6	30.9	43.5	-12.6
7	339.04	34.4	33.1	46.0	-12.9
8	420.39	31.1	30.7	46.0	-15.3
9	162.74	29.0	28.2	43.5	-15.3
10	298.37	31.5	29.8	46.0	-16.2
11	216.98	30.6	29.5	46.0	-16.5
12	271.23	29.3	28.7	46.0	-17.4
13	149.18	27.0	25.7	43.5	-17.8
14	203.42	26.9	25.3	43.5	-18.2
15	176.30	25.3	23.3	43.5	-20.2
16	230.57	27.1	25.1	46.0	-20.9

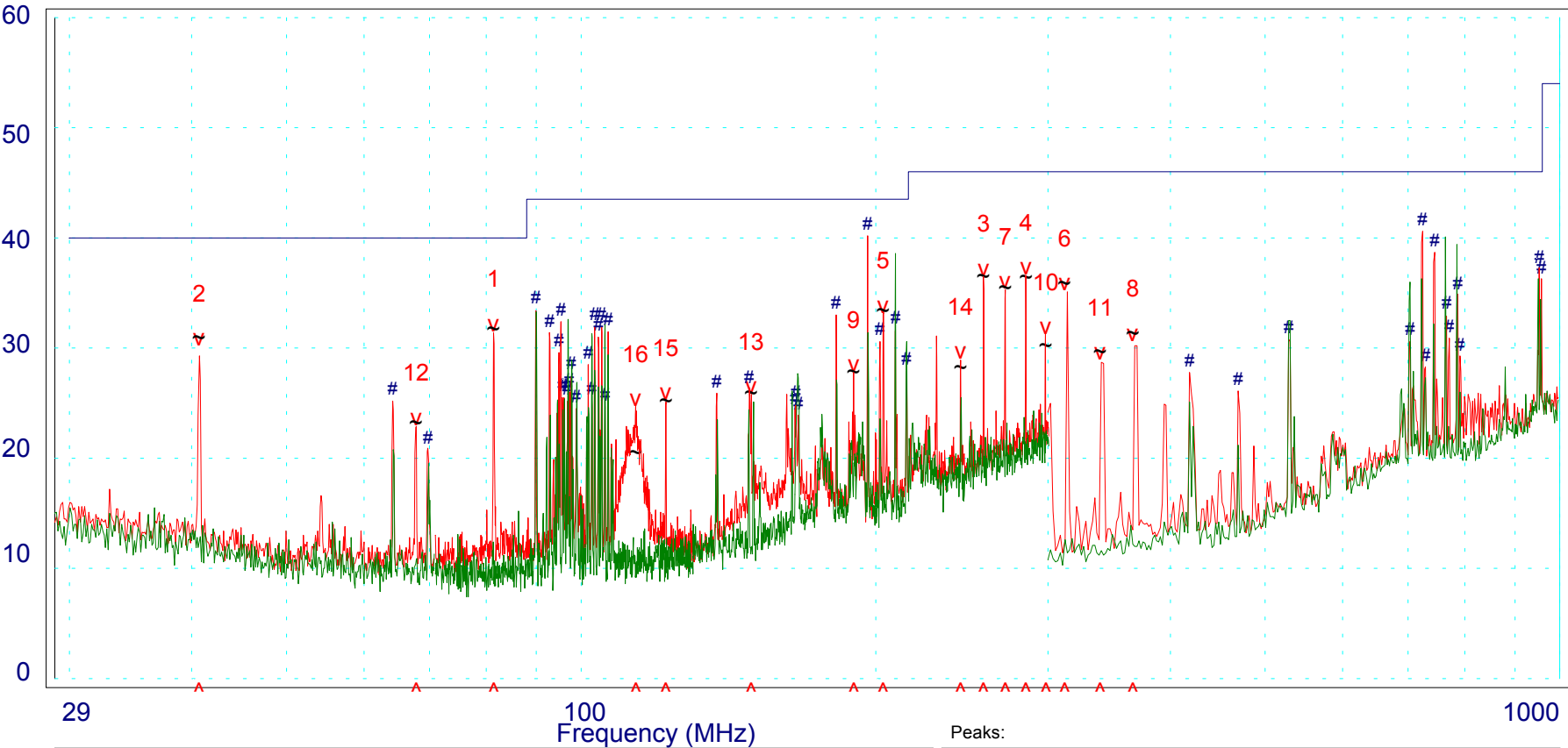
EMC Technologies Pty. Ltd. - Global Product Certification

FCC Class B
Radiated Emissions (dBuV/m)
= Ambient

Job No:T50915R_F C:\plotting\PCF\T50915f_8.PCF

Test Date: 17-10-05

GRAPH No. 12



ERG Transit Systems
Contactless Smart Card Reader
Model: MCR_OEM
14MHz version

Limits:
FCC-B3 FCC CLASS B RAD 3M LIMITS

Legend:
— Horizontal Ambients
— Horizontal Emissions

Source:
\amb0607 6 7 8 9 10 14
T50915r9 18 19 20 21 22 24

Ver 5.5 Build 107
Colo Radiated Test Setup
t:A0690206 c1:C0201105 c2:NONE p:A0961105 a:NONE
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW
Test Officer: Bruce Holdsworth

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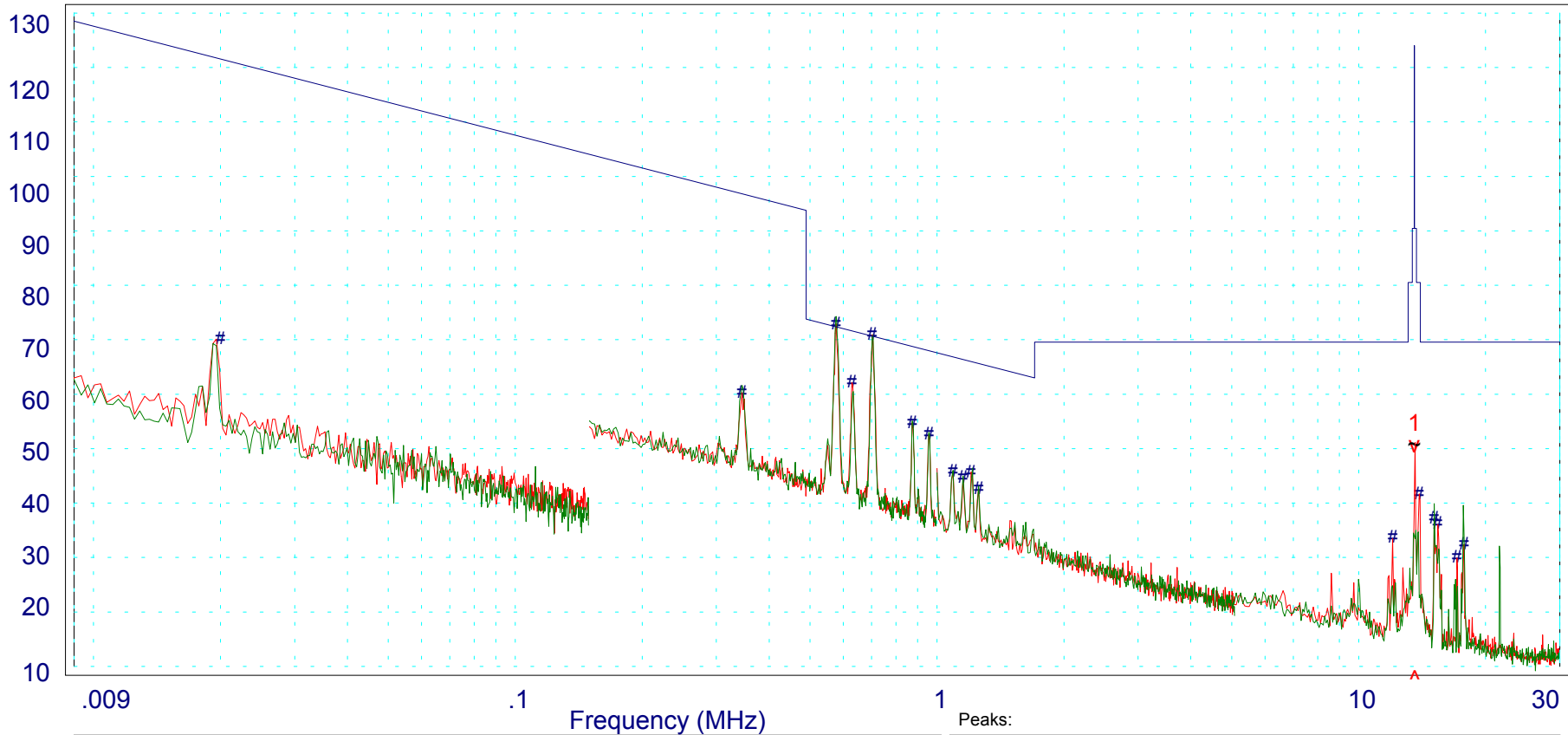
Peaks:					
No	Freq (MHz)	Peak (dBuV/m)	Qp Val	FCC-B3 (dBuV/m)	dL1 (dB)
1	81.37	31.5	31.0	40.0	-9.0
2	40.69	30.2	30.2	40.0	-9.8
3	257.67	36.5	35.7	46.0	-10.3
4	284.79	36.6	35.6	46.0	-10.4
5	203.41	33.1	32.6	43.5	-10.9
6	311.91	35.1	35.1	46.0	-10.9
7	271.23	35.3	34.7	46.0	-11.3
8	366.15	30.6	30.6	46.0	-15.4
9	189.86	27.8	27.0	43.5	-16.5
10	298.35	31.2	29.5	46.0	-16.5
11	339.03	28.9	28.9	46.0	-17.1
12	67.81	22.9	22.4	40.0	-17.6
13	149.18	25.8	25.1	43.5	-18.4
14	244.10	28.9	27.5	46.0	-18.5
15	122.06	25.2	24.4	43.5	-19.1
16	113.68	24.6	19.7	43.5	-23.8

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FCC Class B
Radiated Emissions (dBuV)
= Ambient

Job No:T50915R_F C:\plotting\PCF\T50915f_9.PCF
Test Date: 17-10-05

GRAPH No. 13



ERG Transit Systems
Contactless Smart Card Reader
Model: MCR_OEM
22MHz version

Limits:
FCC_loop_3mFcc Pt15 Subpart C Section 15.209(a) 3Metre Limits

Legend:
Vertical Ambients
Vertical Emissions

Source:
50915r11 11 12 13 14
50915r11 6 7 8 9

Ver 5.5 Build 107
Colo Radiated Test Setup Active Loop
t:A0080408E c1:C0201105 c2:NONE p:NONE a:NONE
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW
Test Officer: Bruce Holdsworth

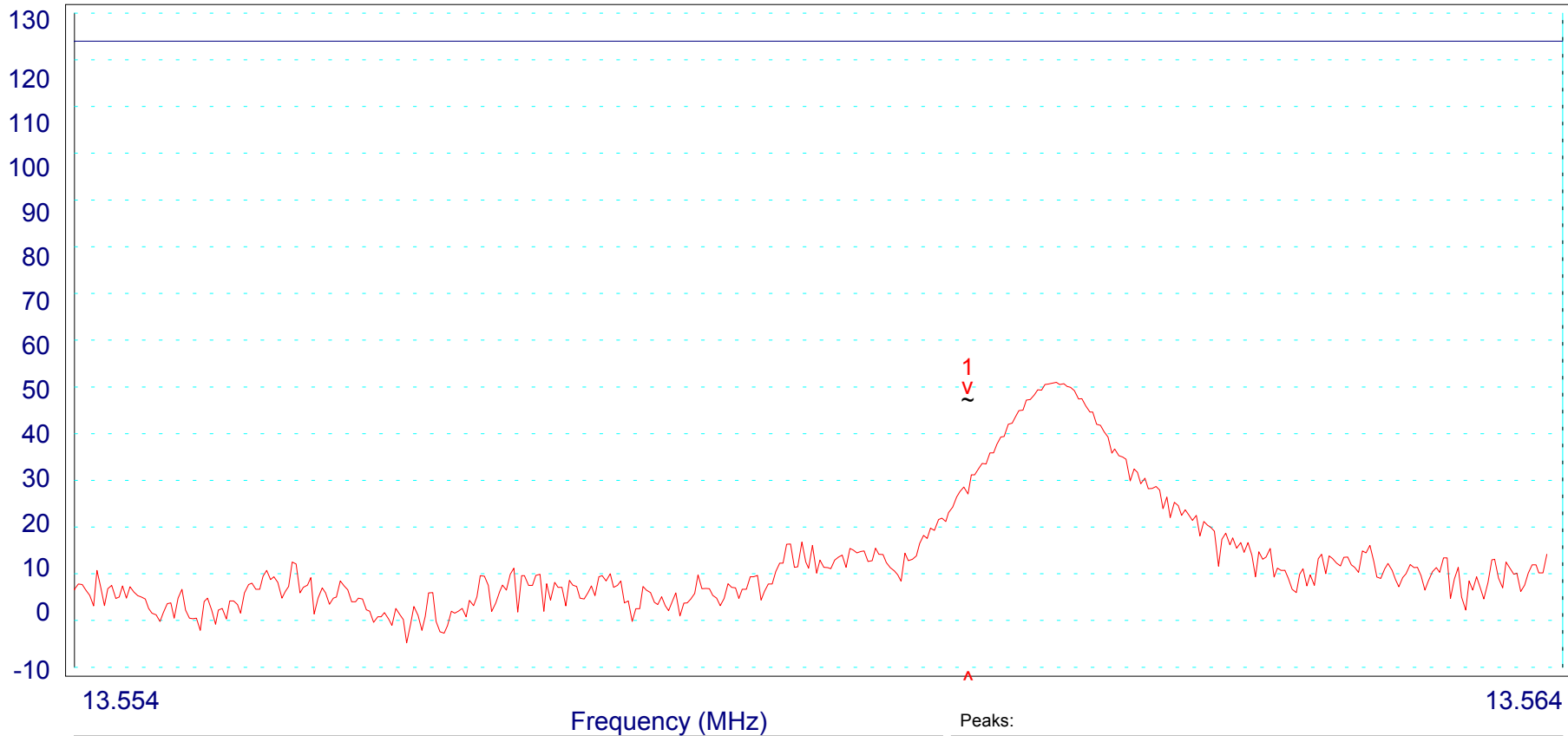
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FCC Class B
Radiated Emissions (dBuV)
= Ambient

Job No:T50915R_F C:\plotting\PCF\T50915f_10.PCF
Test Date: 17-10-05

GRAPH No. 14



ERG Transit Systems
Contactless Smart Card Reader
Model: MCR_OEM
22MHz version

Peaks:					
No	Freq (MHz)	Peak (dBuV)	Qp Val	FCC_loop_3dB (dBuV)	Limit (dB)
1	13.56	51.0	47.9	124.0	-76.1

Limits:
FCC_loop_3mFcc Pt15 Subpart C Section 15.209(a) 3Metre Limits

Legend:
Carrier

Ver 5.5 Build 107
Colo Radiated Test Setup Active Loop
t:A0080408E c1:C0201105 c2:NONE p:NONE a:NONE
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW
Test Officer: Bruce Holdsworth

Source:
50915r11 10

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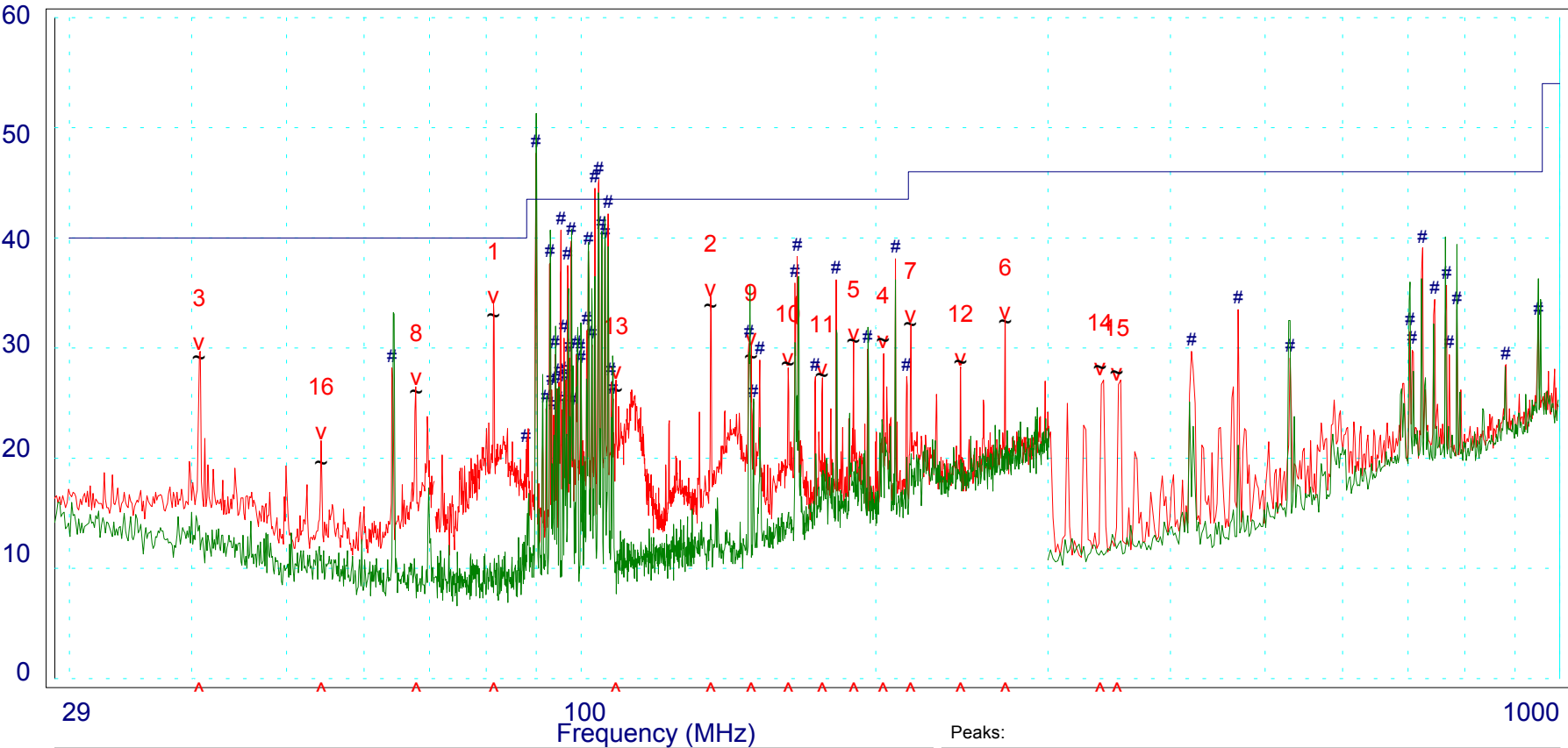
EMC Technologies Pty. Ltd. - Global Product Certification

FCC Class B
Radiated Emissions (dBuV/m)
= Ambient

Job No:T50915R_F C:\plotting\PCF\T50915f_11.PCF

Test Date: 17-10-05

GRAPH No. 15



ERG Transit Systems
Contactless Smart Card Reader
Model: MCR_OEM
22MHz version

Limits:
FCC-B3 FCC CLASS B RAD 3M LIMITS

Legend:
— Vertical Ambients
— Vertical Emissions

Ver 5.5 Build 107
Colo Radiated Test Setup
t:A0690206 c1:C0201105 c2:NONE p:A0961105 a:NONE
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW
Test Officer: Bruce Holdsworth

Source:
50915r10 1 2 3 4 5 13

EMC Technologies (Sydney) 3/87 Station Rd, Seven Hills, NSW, 2147, NSW, Australia
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Peaks:					
No	Freq (MHz)	Peak (dBuV/m)	Qp Val	FCC-B3 (dBuV/m)	dL1 (dB)
1	81.37	34.0	32.2	40.0	-7.8
2	135.61	34.6	33.0	43.5	-10.5
3	40.69	29.8	28.4	40.0	-11.7
4	203.41	29.9	29.9	43.5	-13.6
5	189.86	30.5	29.9	43.5	-13.7
6	271.21	32.5	31.6	46.0	-14.4
7	216.98	32.2	31.4	46.0	-14.6
8	67.82	26.5	25.2	40.0	-14.8
9	149.18	30.2	28.4	43.5	-15.1
10	162.74	28.3	27.7	43.5	-15.8
11	176.30	27.3	26.8	43.5	-16.8
12	244.10	28.3	27.9	46.0	-18.1
13	108.50	27.1	25.4	43.5	-18.1
14	339.03	27.5	27.5	46.0	-18.5
15	352.58	27.0	27.0	46.0	-19.0
16	54.25	21.7	18.8	40.0	-21.3

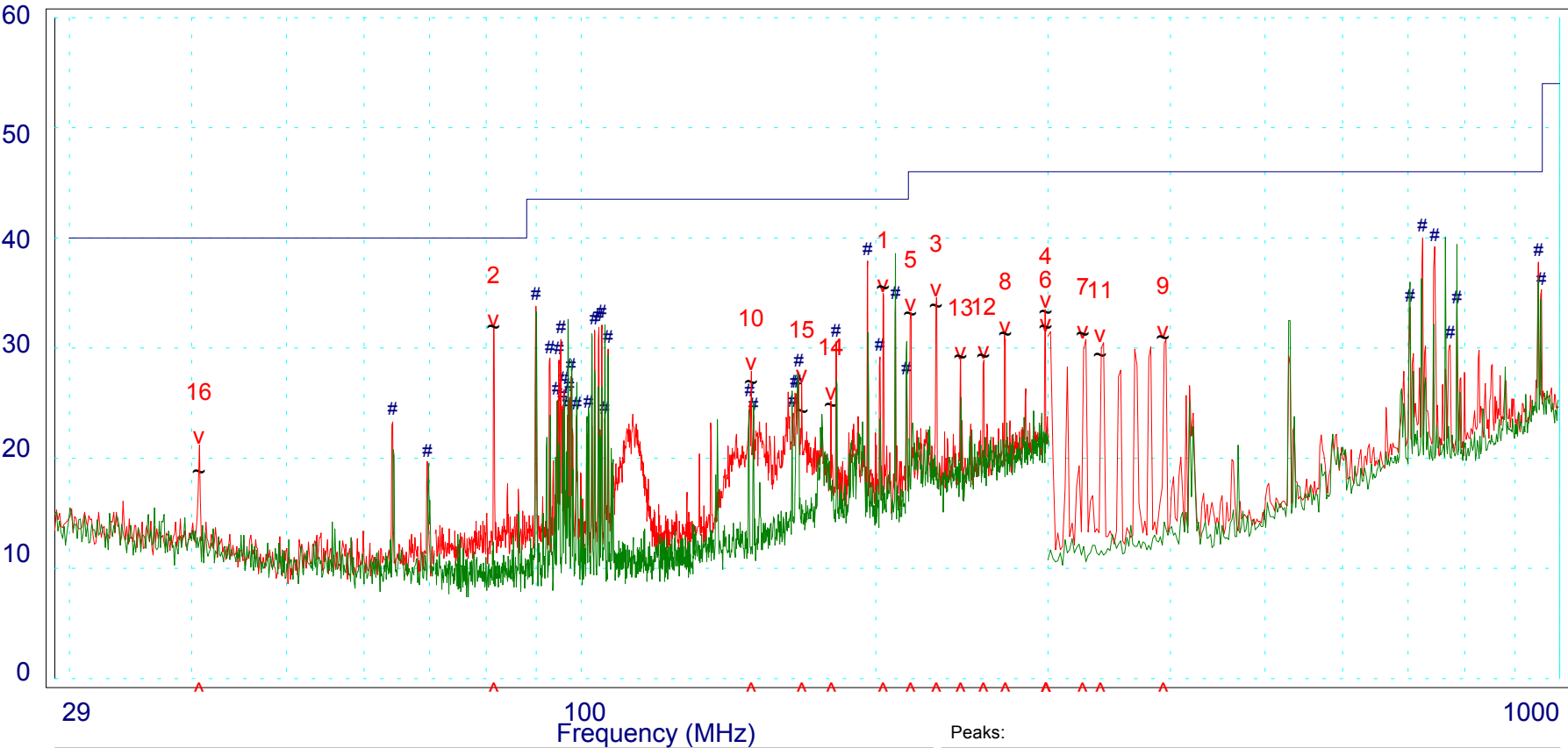
EMC Technologies Pty. Ltd. - Global Product Certification

FCC Class B
Radiated Emissions (dBuV/m)
= Ambient

Job No:T50915R_F C:\plotting\PCF\T50915f_12.PCF

Test Date: 17-10-05

GRAPH No. 16



ERG Transit Systems
Contactless Smart Card Reader
Model: MCR_OEM
22MHz version

Limits:
FCC-B3 FCC CLASS B RAD 3M LIMITS

Legend:
Horizontal Ambients
Horizontal Emissions

Ver 5.5 Build 107
Colo Radiated Test Setup
t:A0690206 c1:C0201105 c2:NONE p:A0961105 a:NONE
Site ID: OATS#1,1247 Upper Colo Rd. Colo, NSW
Test Officer: Bruce Holdsworth

Source:
50915r10 6 7 8 9 10 14

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Peaks:					
No	Freq (MHz)	Peak (dBuV/m)	Qp Val	FCC-B3 (dBuV/m)	dL1 (dB)
1	203.42	35.0	34.7	43.5	-8.8
2	81.37	31.8	31.1	40.0	-8.9
3	230.57	34.6	33.0	46.0	-13.0
4	298.34	33.6	32.5	46.0	-13.5
5	216.98	33.2	32.3	46.0	-13.7
6	298.34	31.4	31.1	46.0	-14.9
7	325.47	30.8	30.5	46.0	-15.5
8	271.24	31.2	30.4	46.0	-15.6
9	393.25	30.8	30.1	46.0	-15.9
10	149.18	27.9	26.1	43.5	-17.4
11	339.04	30.5	28.5	46.0	-17.5
12	257.67	28.9	28.4	46.0	-17.6
13	244.10	28.8	28.4	46.0	-17.6
14	180.03	25.2	24.0	43.5	-19.5
15	168.03	26.8	23.5	43.5	-20.0
16	40.69	21.2	18.0	40.0	-22.0